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10/537,653

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Frank De Lucia

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EXAMINER

BOMAR, THOMAS S

ART UNIT

PAPER NUMBER

3676

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/537,653 | Applicant(s) DE LUCIA ET AL. | |
| | Examiner Shane Bomar | Art Unit 3676 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39,43-98,100,103-139,141-149 and 152 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☒ Claim(s) 5,9-12,51,55-58,83,97,98,107,111-114,145 and 146 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims rejected are 1-4,6-8,13-39,43-50,52-54,59-82,84-96,100,103-106,108-110,115-139,141-144,147-149 and 152.

DETAILED ACTION

Claim Objections

1. Claims 32, 88, and 109 are objected to because of the following informalities: in **claim 32**, it is unclear if the recitation of “a vibratory device” is the same device already in claim 1, or if it is an additional device (the Examiner will hereafter assume it is the same device); in **claim 88**, it is unclear if the recitation of “an expansion device” is the same device already in claim 48, or if it is an additional device (the Examiner will hereafter assume it is another device); and in **claim 109**, the recitation of “for a location” should most likely be --from a location--.

Appropriate correction is required.

Double Patenting

2. Applicant is advised that should claims 3,4, 52, 53, and 79 be found allowable, claims 39, 45, 89, 90, and 94 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). It is further respectfully requested that the Applicant examine the claim listing carefully for further instances of duplication as the Examiner may have missed other duplicate claims due to the large number of claims presented.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 4, 6, 7, 16, 17, 20, 25, 26, 28-39, 44, 46-48, 50, 52-54, 59-63, 66, 71, 72, 74-82, 84-91, 93-96, 103, 104, 106, 108-110, 115-119, 122, 127, 128, 130-139, 141-144, 147, and 152 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,695,065 of Simpson et al.

Regarding claims 1, 2, 48, and 104, Simpson et al disclose an apparatus, system, and method for radially expanding and plastically deforming an expandable tubular member 12, comprising: an expansion cone 20 movable in the expandable tubular member for radially expanding and plastically deforming the expandable tubular member; a vibratory device 26 coupled to the expansion device for generating vibratory energy to agitate at least one of the expandable tubular member and the expansion device; and an actuator device 18 coupled to the expansion device for displacing the expansion device relative to the expandable tubular member (Fig. 1; col. 4, line 59 through col. 5, line 27). It is noted that the device 26 is reciprocated at a high frequency, which is synonymous with vibration.

Regarding claims 4, 39, and 106, shaft 18 is a means for rotating the cone 20, but the friction between the cone and the tubular retards the rotation (col. 5, lines 2-4).

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Regarding claims 6, 7, 52, 53, 89, 90, 108, and 109, the lower portion of the vibratory device is positioned within an expanded portion of the tubular, and a lower portion 22 of the device is within the cone 20 (Fig. 1).

Regarding claims 17, 20, 44, 46, 54, 59-61, 63, 66, 93, 103, 110, 115-117, 119, 122, 135, 141, 142, and 152, the device is capable of operation at 40 Hz and, due to the shape of the cone, the vibratory energy must be in more than one plane and injected at a plurality of locations over the face of the cone, such as radially and longitudinally (col. 3, lines 8-13).

Regarding claims 25, 26, 28, 71, 72, 74, 127, 128, and 130, the vibratory energy is constant and/or variable depending on the speed at which the shaft is rotated and the rate of advance of the device, and the plane of the energy is constant (col. 3, lines 13-23; col. 5, lines 16-26).

Regarding claims 29-31, 75-77, and 131-133, the expandable tubular member can be a casing, pipeline, and/or a structural support for wellbore walls (col. 3, lines 28 and 29).

Regarding claims 32, 50, 79, 94, and 136, the vibratory device will impart rotation to the expansion device, yet the rotation is retarded due to the friction between the expansion device and the expandable tubular (col. 5, lines 1-8).

Regarding claims 33, 34, 47, 78, 80-82, 134, and 137-139, the vibratory device is adapted to impact the tubular member through impacts to the expansion device (col. 5, lines 21-26).

Regarding claims 35-38, 84-87, and 91, the curved shape of the cone and the curved fluted portions of the cone appear to provide the claimed shapes and facets (Fig. 1).

Additionally, the flutes, or grooves, separate the face of the cone into discrete spaced apart

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locations so that vibratory energy is injected from the cone into the tubular at said discrete spaced apart locations.

Regarding claim 88, an additional expansion device is rotated to expand the tubular member (col. 2, lines 51-59).

Regarding claims 95, 96, 143, and 144, the slots in the metal tubes increase the plasticity and formability of the tubular before and during expansion (col. 4, lines 24-28).

Regarding claims 1, 16, 48, 62, 104, 118, and 147, the embodiment of Figures 2 and 3 discloses a fluid powered vibratory device.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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7. Claims 3, 45, 49, and 105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson et al in view of US 7,121,337 of Cook et al.

Simpson et al teach the expansion device of claims 2, 48, and 104 from above, although it is not specifically taught that a locking device is used to fix the position of the expandable tubular relative to the actuator. Cook et al teach an apparatus, system, and method for radially expanding a tubular similar to that of Simpson et al. It is further taught that slips 1960 can fix the position of the expandable tubular relative to the actuator (Fig. 15 and related description). Thus, at the time of the invention, it would have been obvious to one of ordinary skill in the art to try the slips of Cook et al with the expansion device of Simpson et al (KSR Rationale E).

8. Claims 8, 13-15, 18, 19, 21-24, 27, 43, 64, 65, 67-70, 73, 92, 100, 120, 121, 123-126, 129, 148, and 149 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson et al.

Simpson et al teach the apparatus, method, and system for radially expanding and plastically deforming an expandable tubular member as shown in the 102(e) rejections above. However, it is not specifically taught that there is a plurality of vibratory devices, or that the vibratory energy has a frequency distribution with a plurality of center frequencies. Nevertheless, it is first taught that more than one expansion device could be used (col. 2, lines 51-52); thus, at the time of the invention, it would have been obvious to one of ordinary skill in the art to try an additional vibratory device to aid in expansion (KSR Rationale E). Additionally, as the Simpson et al expansion device is structurally similar to the claimed device, as noted in the 102(e) rejections above, it would have been obvious to one of ordinary skill in the art that the expansion device of Simpson et al will have vibratory energy that has a frequency distribution

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with a plurality of center frequencies and that the plane of the vibratory energy is variable (KSR Rationale D).

Allowable Subject Matter

9. Claims 5, 9-12, 51, 55-58, 83, 97, 98, 107, 111-114, 145, and 146 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

10. Applicant's arguments, see pages 22-26, filed February 11, 2008, with respect to the restriction requirement have been fully considered and are persuasive. The restriction requirement is hereby withdrawn.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane Bomar whose telephone number is (571)272-7026. The examiner can normally be reached on Monday-Thursday from 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer H. Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shane Bomar/
Examiner, Art Unit 3676